

condensing against the wearer's face,

c) the nose channel at least at the region adjacent the nose being separate and independent of the mouth channel.

26. A flexible cold-weather breathing apparatus as claimed in claim 25, wherein the nose channel's third and fourth inlet-outlet openings are located within the mouth channel such that the exhaled air from the wearer's nose flows at least in part through the mouth channel adjacent its third or fourth inlet-outlet openings.

REMARKS

Claims 1-7, 10, 12, and 14-17 have been canceled without prejudice to reduce the issues and claims 8, 9, and 11-13 amended to clarify the invention. New claims 18-26 have been added.

With respect to the rejections based on Section 112, the claims have been rewritten to avoid indefiniteness and provide proper antecedents for all claim terms used. It is believed that the new claims are free of the problems raised by the Examiner, and reconsideration and withdrawal are respectfully requested.

With respect to the rejections based on Section 102 or 103 on Conkle in view of Stroup or Daneshvar, or both, reconsideration and withdrawal are respectfully solicited in view of the following remarks.

As set forth in the specification at pages 2-4 in the invention summary, the invention is directed to a cold weather protecting mask or hood primarily intended for use as a ski mask, when the wearer is exposed to cold air driven against his face while moving forward. A main feature of the inventive mask is to directly shield the wearer's face, especially, the skin area surrounding the nose and mouth, from the impinging cold wind. Thus, as is clear from Figs. 1 and 10, the nose and mouth of the wearer are always covered over by the mask. However, an outlet must be provided for exhaled air also to serve as an inlet for inhaled air. In the invention, it is important that the exhaled air which typically contains moisture for the most part is mostly prevented from passing over the mouth and nose of the wearer and in cold weather condensing on the wearer's skin and possibly freezing.

To avoid this problem, the mask of the invention provides two at least in part isolated

channels for exhaled air from the mouth and nose, respectively. In Fig. 9A, the nose channels 70 for exhaled air passage are shielded 76 from the mouth channels 72 for exhaled air passage by the shielding member 76. See also Fig. 9C and Fig. 9D. In Fig. 9B, the left nose channel 70 may cross over the mouth providing, possibly, some discomfort, but the shortest path taken by most of the exhaled air is from the right nose channel to the outlet 38.

The new claims it is believed set forth these main features of the invention. Claim 18 which is directed to all the embodiments recites that the head garment has face-protective portions covering the wearer's face regions surrounding the wearer's mouth and nose. This can be seen in Figs. 7 and 8, and also in Fig. 10 (these are the cloth portions underneath the mouth-channel-forming member 96 surrounding the mouth and nose). The face-protective portions including a first opening 34 positioned over the mouth opening of the wearer and a second opening 28 positioned under the nose opening of the wearer,

The mouth-channel-forming member 12 which provides the main protective function is mounted on the head garment and has an outer solid surface extending over the wearer's mouth and nose and, between the outer solid surface and the face-protective portions, the mouth-channel-forming member has a first opening 34 aligned with the head garment's first opening and a second opening 28 spaced from and separate from the first opening and aligned with the head garment's second opening, the mouth-channel-forming member being positioned such that the wearer's mouth and nose are directly shielded by the outer solid surface from the outside air. The mouth-channel-forming member also is provided with third 38 and/or fourth 38 inlet-outlet openings laterally spaced from the mouth-channel-forming member's first and second openings and are positioned to direct air away from and sideways with respect to the wearer's mouth and nose. The mouth-channel-forming member is configured to form a mouth channel 72 for directing the wearer's exhaled air after passage through the head garment's first and second openings through the mouth channel to the mouth-channel-forming member's third and/or fourth inlet-outlet openings and together with the face-protective portions to minimize any moisture present in the exhaled air from the mouth or nose condensing against the wearer's face.

This embodiment of the invention also provides a nose-channel-forming member 20, 92 integral with the head garment and connected to the mouth-channel-forming-member and having

a first opening 24 aligned with the mouth-channel-forming member's second opening 28 and at least a second inlet-outlet opening 40 aligned with the mouth-channel-forming member's third or fourth openings, the nose-channel-forming member forming a nose channel 70 for passage of exhaled air from the nose to the nose-channel-forming member's second or third inlet-outlet openings.

It will be apparent that none of the three citations relied on, however combined, show or suggest a structure capable of achieving the results described above.

Specifically, Conkle describes a mask for underwater use, with the mask made of waterproof rubber, and provided with an air-inlet pipe 8 coupled to the user's nose and a separate air-outlet pipe 8 coupled to the user's mouth. Conkle does not meet the terms of new claims 18 and 23 because Conkle does not show the face-protective portions covering the wearer's face regions surrounding the wearer's mouth and nose, with a mouth-channel-forming member mounted on the head garment and having an outer solid surface extending over the wearer's mouth and nose and, between the outer solid surface and the face-protective portions, such that the wearer's mouth and nose are directly shielded by the outer solid surface from the outside air, and the exhaled air exits laterally with respect to the wearer's mouth and nose.

Moreover, assuming the diver's head is below the water surface in use, the pipes 8, 9 must extend vertically high enough so that their port is above the water surface. Clearly, such a device would appear plain silly if used by a skier. Moreover, the upward extending pipes 8, 9 would have no purpose in a ski mask. It is submitted that the person of ordinary skill in the art would not be motivated to use any of the Conkle teachings in a cloth garment intended for use as part of a ski mask.

The addition of Stroup does not improve the rejection. Stroup provides a mask in which the mouth area is exposed and unprotected. Moreover, he shows a separate inlet to the nose 14, and a separate outlet 17 also for the nose requiring a one-way valve 23. No mouth-channel-forming member is disclosed or suggested.

The Examiner argues that it would be obvious to add the sideways flow structure of Stroup presumably to replace the Conkle upward pipes. The Examiner seems however to have overlooked the fact that, in use, the wearer's head is underwater. That means that the Stroup

intake/outlet 14, 17 will also be underwater in use. Surely that would make it non-obvious to add the Stroup breathing structure to the Conkle device.

The combination of Conkle and Stroup is purely arbitrary with no basis in their separate disclosures for their combination as suggested by the Examiner. Again, Conkle's mask is used underwater. Stroup's mask cannot be used underwater as the mouth is exposed. Moreover, the Stroup mask is made of knitted fabric, which again cannot be used underwater. The person of ordinary skill in the art would not be motivated to use Conkle's upward-extending pipe on the Stroup mask as it would be plain silly. Similarly, the person of ordinary skill in the art would not be motivated to use Stroup's intake and outlet at the nose level in Conkle's mask, as the latter could not then be used underwater and would be inoperative. So, it is submitted that the combination of Conkle and Stroup would not be obvious to the person of ordinary skill in the art.

The combination of Conkle with Daneshvar is equally unreasonable for similar reasons. The main embodiment of Daneshvar has an exposed mouth, making his mask useless underwater. A second embodiment provides a filter over the mouth opening, but the filter is air porous, and there is no teaching that it is impervious to water, so that again his mask is useless underwater.

The person of ordinary skill in the art would not be motivated to use Conkle's upward-extending pipe on the Daneshvar mask as it would be plain silly. Similarly, the person of ordinary skill in the art would not be motivated to use Daneshvar's intake and outlet at the nose/mouth levels in Conkle's mask, as the latter could not be used under water. So, it is submitted that the combination of Conkle and Daneshvar would not be obvious to the person of ordinary skill in the art.

Claims 8, 9, 11, 13, and 19-24, which depend from claim 18, should also be allowable.

Concerning the claims dependent on claims 18, they have additional distinctions over the prior art. For example, claim 8 recites that the nose-channel-forming member is removably inset in the mouth-channel-forming member. The Examiner appears to agree that this feature is not shown in the cited art, but argues it does not produce unexpected results. Firstly, unexpected results is not essential to support patentable subject matter. Non-obvious subject matter is required. Secondly, as explained, Page 6, starting at line 21 shows the importance of being able to remove and clean parts of

the mask, a result not shown or suggested anywhere in the cited art. This feature is therefore non-obvious and makes claim 8 additionally allowable.

Claim 22 recites that the nose channel's third or fourth inlet-outlet openings are located within the mouth channel such that the exhaled air from the wearer's nose flows at least in part through the mouth channel adjacent its third or fourth inlet-outlet openings. In Conkle and Stroup, separate tubes are used for the inhaled/exhaled air. Neither show or suggest that the nose channel near its outlet feeds into the mouth channel. Hence, claim 22 is allowable for this reason also.

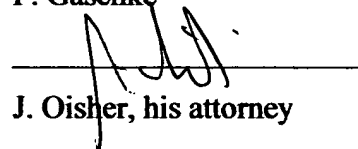
Claim 25 is allowable for similar reasons to that expressed above with respect to independent claim 18.

Claim 26 is allowable for similar reasons to that expressed in connection with claim 22.

It is believed that the present amendment places the case in condition for allowance and such action is earnestly solicited.

Respectfully submitted

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

8. A cold weather breathing apparatus as claimed in claim 18 [6], wherein said nose-channel-forming member is removably inset within said mouth-channel-forming member.

9. A cold weather breathing apparatus as claimed in claim 18 [2], further comprising a mouth-disc forming member with a hole passing through [its] the center of the mouth-disc forming member and which mouth-disc forming member is fastened around said first opening [hole] in said head garment.

11. A cold weather breathing apparatus as claimed in claim 9 [1], wherein said mouth-disc-forming member and nose-channel-forming member are attached to said head garment, and said mouth-channel-forming member is mounted to both the nose-channel-forming member and the mouth-disc-forming member.

13. A head garment as claimed in claim 18 [1] wherein said head garment is constructed from an upper panel means and a lower panel means forming a pocket for the wearer's [wearers] nose , upper and lower meaning with respect to their position on the wearer's head.